

ON-SYSTEM PROGRAMMABLE AND OFF-SYSTEM PROGRAMMABLE CHIP

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ABSTRACT OF THE DISCLOSURE

An on-system programmable and off-system programmable chip comprises a control circuit connected to an
10 on-system programmable nonvolatile memory and an off-system programmable nonvolatile memory, and a pumping circuit connected to the on-system programmable nonvolatile memory. In a programming mode of the chip, external programming voltages are provided for programming the off-system programmable nonvolatile
15 memory, and in an operation mode of the chip, the pumping circuit produces internal programming voltages for the on-system programmable nonvolatile memory for programming the on-system programmable nonvolatile memory.